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serve as a guide for the committee in charge. As it is necessary to push the arrangements as rapidly as possible, those who have words of suggestion or encouragement to offer should not delay to make them known.

The plan, so far as it has been outlined at present, is to invite the botanists of the world to meet at Chicago, sometime during August, 1893, to discuss such matters of interest as may be arranged for beforehand or be brought up at the time, and to enjoy the benefits of personal acquaintance. During the meeting a few stated lectures will be given by distinguished botanists, designed more especially for the general public. Excursions and other means of promoting good fellowship and a profitable time are among the possibilities.

It is hoped to secure for the gathering a truly international character, which will make it not only a notable and pleasant occasion, but give its deliberations a weight and sanction of authority that will do much toward settling disputed questions and advancing the science.

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IN THE September number of *Grevillea* the editor makes the most startling comments on the availability of German mycological works. He says, referring to Brefeld's *Untersuchungen aus dem gesamt Gebiete der Mykologie*, "Mycologists are very limited in number in these islands, and some of these are unable to purchase indiscriminately . . . whilst the number capable of perusing German with ease is considerably less. All those capable of reading and appreciating Dr. Brefeld's works for instance, could be counted on the fingers of one hand!" That, if true, is a lamentable condition. But we hope the statement is too strong.

CURRENT LITERATURE.

Minor Notices.

THE ANNUAL report of 1890 of the state botanist of New York,¹ Chas. H. Peck, contains a list of the plants added to the herbarium during the year (261 species); among which are thirty-six new species of fungi. These are described, and figured on the four plates. There is also a revision of the genus *Tricholoma* which is represented in the

¹PECK, CHARLES H.—Annual report of the state botanist of the state of New York, made to the regents of the University. From the 44th report of the N. Y. state museum of Natural History. 8vo. pp. 75. pl. 4. Albany: Lyon, state printer, 1891.

state by forty-eight species. The revision is accompanied by full descriptions of these species, with synoptical tables of each of the different groups. The report closes with a list of the plates in a MS. volume regarding the fleshy fungi of Maryland prepared in the course of several years by Miss Mary E. Banning of Baltimore. Miss Banning has made water-color drawings (175 sheets 12×15 inches) of 151 species, accompanied by MS. descriptions and notes, together with a full index. This volume she has presented to the State Museum — a most generous and valuable gift.

VERY FEW researches on the bacteria of the deep sea have been made; indeed the studies of Mr. H. L. Russell, a graduate and sometime Fellow of the University of Wisconsin, which he prosecuted at the zoölogical station at Naples, are almost the first. Through the kindness of the director, Dr. Dohrn, every convenience was afforded him for obtaining samples of water and slime at every available depth in the Gulf of Naples and for investigating the forms so obtained. A large number of soundings were made, up to 1100 meters (3600 ft.). While the observations were not sufficiently numerous to constitute a complete investigation of the subject, the conclusions reached are interesting. Mr. Russell found that the number of micro-organisms present in the sea water appeared rather smaller than those in an equal volume of fresh water. (Upon the latter the author made prolonged study while at the University of Wisconsin.) There do not appear to be any zones of distribution of the bacteria in the water, but the superficial and deepest parts have about the same number. In the slime the number is always vastly greater than in the water above; and their proportion, except perhaps in the littoral zone, is not due to contributions from land but from the growth and multiplication of endemic individuals. Although there are no zones of distribution in the water, in the slime there is a gradual diminution from the maximum near the surface to a depth of 200 m., but from that depth on to 1100 m. (the greatest depth investigated) there is no diminution. The minimum was therefore not reached.

Mr. Russell has brought back with him a large number of cultures of the forms obtained from the deep sea which he intends investigating qualitatively.

DR. C. E. BESSEY publishes as a bulletin of the agricultural experiment station, a list of the native trees and shrubs of Nebraska. The

¹RUSSELL, H. L. — Untersuchungen über in Golf von Neapel lebende Bacterien. Separat-Abdruck aus der Zeitschrift für Hygiene und Infektionskrankheiten, Band XI. 1891. 8vo. pp. 165—207. pl. XII. and XIII. 1891.

list includes 125 species, about equally divided between the two. A discussion of the distribution of the woody plants of the state at the close is interesting. Dr. Bessey thinks that this distribution shows that the woody plants have nearly all come up the Missouri bottoms and spread west and north-west. Those found only in the western part have undoubtedly come from the Rocky Mountains and have spread eastward to their present limits.

The nomenclature of the list shows a wide departure from that of the Manuals. Justifiable as many of these departures are, they seem out of place in such a publication as the present, because they certainly interfere with its usefulness for those not specialists.¹

IF COLLECTORS are not properly informed as to how to collect plants it will not be for want of instructions. Two months ago we noticed Prof. Penhallow's booklet; now we have before us a pamphlet issued by the National Museum and prepared by Mr. F. H. Knowlton.² It contains directions for collecting all sorts of plants, as well as for caring for them after they are collected. In its preparation the author has drawn freely on Bailey's Collector's Handbook and the herbarium number of this journal (June, 1886, for which there was such a demand that the extra edition was soon exhausted). In many respects the present directions are better than their predecessors; it extends their range by giving directions for the collection of fossil plants. Certainly now if one puts together the instructions to be found in every text book and in almost every flora, those of Bailey, Penhallow and Knowlton, he will have all the knowledge that writing can give him of how to preserve plants. *Jam satis!*

OPEN LETTERS.

A section of botany in the American Association.

The thought of having a section for the botanists in the A. A. A. S. should be very inspiring to all who have at heart the thorough study of plant life in America. All admit that Section F is now crowded with members and papers, and doubtless many are deterred from taking part in the sessions from lack of opportunity. At the last

¹BESSEY, C. E.—Preliminary report on the native trees and shrubs of Nebraska. Bulletin 18 of the Ag. Exp. Sta. of Neb., vol. iv. art. iv. pp. 171-202.

²KNOWLTON, F. H.—Directions for collecting recent and fossil plants. Part B of Bulletin of U. S. Nat. Mus. no. 39. 8vo. pp. 46. figs. 10. Washington: Gov. Printing Office. 1891.